

## **CHAPTER 1, FOOD SAFETY**

### **Section V. STRUCTURAL REQUIREMENTS AND SANITARY CONTROLS**

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#### **5-1 INTRODUCTION**

Basic structural standards in food establishments shall conform to the requirements in this chapter, the Department of Defense Construction Criteria Manual, DoD 4270.1M, and NAVSEA S9-AAO-AA-SPN-010/GEN-SPEC, General Specifications For Ships of the United States Navy, whichever is applicable. The installation PMA should be involved with design review of all new construction and rehabilitation of Navy and Marine Corps food establishments at shore stations.

#### **5-2 FLOORS, WALLS, AND CEILINGS**

- 5-2.1 FLOORS (DECKS)**
- 5-2.2 WALLS AND CEILINGS (BULKHEADS AND OVERHEADS)**

##### **5-2.1 Floors (Decks)**

a. The floors in all food preparation areas, food storage areas, ware washing areas, walk-in refrigerators and freezers, dressing rooms, locker rooms, toilet rooms, vestibules, inside refuse storage rooms, and food vending machine areas must be constructed of smooth durable, sealed concrete, terrazzo, quarry tile, ceramic tile, durable grades of vinyl/plastic tile, vinyl or plastic linoleum, or tight-fitting plastic impregnated wood.

b. Adequate drains must be provided in floors which are flushed with water for cleaning or which receive discharges of water or other fluid wastes from equipment. Floors will be graded to drain.

c. Floors which are water flushed, receive discharges of water or other fluid wastes, or are in areas where pressure spray methods of cleaning are used must be made of nonabsorbent materials.

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d. Carpeting may be used on the floors of dining areas. It must be of closely woven, easily cleanable material and installed tightly against the wall under the coaming or installed away from the wall with a space between the carpet and the wall that permits easy cleaning of the space with the edges of the carpet secured by metal stripping or some other means. Carpeting must not be installed as a floor covering in food preparation areas, food storage areas, ware washing areas, hand washing areas and toilet room areas where urinals and toilets are located.

e. Supplemental flooring such as nonskid surfaces, mats, and duckboards must be designed to be easily cleanable, constructed of nonabsorbent material and be grease resistant in areas exposed to large amounts of grease and water. When used as a mat in areas not exposed to large amounts of grease and water, they should be constructed of rubber/plastic backed closely woven material. Supplemental flooring should be NSF listed or equivalent.

f. All floors must be kept clean.

### **5-2.2 Walls and Ceilings (Bulkheads and Overheads)**

a. The walls, wall coverings and ceilings in areas listed in section 5-2.1 must be nonabsorbent.

b. When concrete, pumice blocks, or bricks are used for interior wall construction, they must be finished and sealed to provide a nonabsorbent, easily cleanable surface.

c. Wall and ceiling covering materials must be attached and sealed so they are easily cleanable.

d. Light fixtures, vent covers, wall mounted fans, decorative materials and similar attachments to walls and ceilings must be easily cleanable.

e. Studs, joists, rafters and piping in shore based facilities will not be exposed in areas listed in section 5-2.1, except that studs, joists, and rafters may be exposed in the overhead protection of outside service areas. Piping may be exposed aboard ship if it is finished to provide an easily cleanable surface.

## **5-3 LIGHTING AND VENTILATION**

### **5-3.1 LIGHTING**

### **5-3.2 VENTILATION**

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### **5-3.1 Lighting**

a. At least 10-foot candles of lighting must be available at any time in all food service areas and rooms including walk-in units.

b. The lighting on food preparation and ware washing work surfaces must be at least 50 foot candles.

c. The lighting in packaged food and fresh produce sales areas, hand washing areas, ware washing areas, equipment and utensil storage areas, and toilet areas must be at least 20 foot candles at a distance of 30 inches from the floor.

d. Shielding to protect food from broken glass must be provided for all artificial lighting fixtures located over, by, or within food storage preparation, service, and display facilities and areas where food service equipment is cleaned and stored.

### **5-3.2 Ventilation**

a. Food service establishments must be ventilated, mechanically if necessary, to be free of excessive heat, steam, condensation, vapors, obnoxious odors, smoke, and fumes.

b. If necessary, all rooms, areas, and equipment from which aerosols, offensive odors, or noxious gases or vapors may originate must be vented effectively to the outside.

c. Intake air ducts will be designed and maintained to prevent the entrance of dust, dirt, insects, and other contaminated materials.

d. Ventilation hoods and grease filters must be cleaned of dirt and grease as often as necessary, and at least weekly to avoid the danger of fire. Filters which cannot be adequately cleaned must be replaced.

e. On surface ships, General Specifications for Ships of the United States (NAVSEA S9AAO-AASPN-010/GEN-SPEC) requires a ventilation grease interceptor hood be installed over each steam kettle, roast oven, bake oven, convection oven, griddle, fry kettle, doughnut fryer, deep fat fryer and range. These interceptors are equipped with a semiautomatic detergent cleaning system. The hood serving the deep fat fryer and doughnut fryer must be fitted with a fire extinguishing system.

f. The interior of ventilation ducting must be cleaned periodically as required by the preventive maintenance system. Access plates must be provided as necessary to gain cleaning access to duct work.

g. Temperatures in shipboard spaces that equal or exceed 100°F must be reported to the Medical Department immediately.

### **5-4 DRESSING ROOMS AND LOCKERS**

a. Dressing rooms or designated dressing areas must be provided outside food preparation, storage, and serving areas, equipment storage areas, and sculleries when employees routinely change their clothes within the establishment.

b. Adequate lockers or other suitable facilities must be provided and used for the storage of employees' clothing and belongings.

c. Dressing rooms, designated dressing areas, and lockers must be kept clean and orderly.

### **5-5 HOUSEKEEPING**

#### **5-5.1 GENERAL**

#### **5-5.2 CLEANING METHODS**

#### **5-5.3 SERVICE SINKS OR CURBED CLEANING FACILITY**

#### **5.5.4 MAINTENANCE EQUIPMENT AND SUPPLIES**

#### **5-5.5 UNNECESSARY PERSONS**

#### **5-5.1 General**

The entire food service facility and all areas of the property used in connection with operation of the establishment must be kept neat, clean, and free of litter, refuse, and garbage.

#### **5-5.2 Cleaning Methods**

a. Dustless methods of cleaning must be used, such as wet cleaning, vacuum cleaning, mopping with treated mops, or sweeping using a broom with dust arresting compounds.

b. Sponges may not be used in contact with cleaned and sanitized or in use food contact surfaces.

#### **5-5.3 Service Sinks or Curbed Cleaning Facility**

a. The cleaning of mops and similar cleaning tools and materials, and the disposing of mop water and similar liquid

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wastes in food preparation sinks, hand washing facilities, and ware washing facilities is prohibited.

b. At least one service sink or curbed cleaning facility with a floor drain must be provided for cleaning mops and for the disposal of mop water and similar liquid waste.

### **5-5.4 Maintenance Equipment and Supplies**

Maintenance and cleaning equipment and supplies such as brooms, mops, vacuum cleaners, soaps, disinfectants and similar equipment and supplies must be:

a. Stored so they do not contaminate food, equipment, utensils, or linens.

b. Stored in a space or area that is provided with adequate ventilation to prevent malodors and allow gear to dry.

c. Stored in an orderly manner that will facilitate cleaning of the maintenance equipment storage spaces.

### **5-5.5 Unnecessary Persons**

Unnecessary persons in the food preparation or utensil washing area are prohibited. Controlled visits/tours may be authorized by the person in charge.

## **5-6 WATER SUPPLY AND SEWAGE DISPOSAL**

### **5-6.1 POTABLE WATER SYSTEM**

#### **5-6.2 STEAM**

#### **5-6.3 SEWAGE**

#### **5-6.4 EQUIPMENT CONNECTIONS**

### **5-6.1 Potable Water System**

a. Ashore, adequate potable water for the needs of the food establishment must be provided from an approved source and meet the standards of NAVMEDCOMINST 6240.1 series and/or chapter 5 of this manual.

b. At sea, potable water standards can be found in chapter 6 of this manual and/or NSTM 533.

c. Hot and/or cold water under pressure must be provided to all fixtures and equipment that use potable water.

d. Plumbing, fixtures and equipment must be installed to preclude backflow into the potable water supply system (e.g., faucets on which hoses are attached must have a backflow prevention device). Other outlets must be protected by an air gap twice the effective opening of the potable water outlet diameter, unless the outlet is a distance less than three times the effective opening away from a wall or similar vertical surface, in which case the air gap must be three times the effective opening of the outlet. In no case will the air gap be less than one inch.

### **5-6.2 Steam**

Steam used in contact with food and food contact surfaces must be free from any materials or additives other than those specified in 21 CFR 173.310. Currently, shipboard steam contains additives which are not acceptable for use with food and/or food contact surfaces.

### **5-6.3 Sewage**

Ashore, all sewage wastes must be disposed through an approved community sewage treatment plant or an individual sewage disposal system which is sized, constructed, maintained and operated according to law. References include Chapter 7, NAVMED P-5010; OPNAVINST 5090.1; and NSTM 593.

### **5-6.4 Equipment Connections**

a. Ware washing machines, refrigerators, steam kettles, potato peelers, and other similar equipment must not be directly connected to the wastewater system without an air gap between the equipment and the wastewater lines. Where permitted by law, a sink may have a direct connection provided the drain line is properly trapped. Ware washing machines may have direct connections between their waste outlets and the floor drain when the connection is on the inlet side and immediately adjacent to the floor drain trap, and the floor/deck drain is properly trapped and vented.

b. Ice making machines will have an air gap as specified in section 5-6.1(c) between the outlet and the drain's wastewater line.

## **5-7 TOILET AND LAVATORY FACILITIES**

### **5-7.1 TOILET FACILITIES**

### **5-7.2 HAND WASHING LAVATORY FACILITIES**

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### **5-7.1 Toilet Facilities**

a. Toilet facilities must be conveniently located, adequate in number (see 29 CFR 1910.141(c)), and easily accessible to employees at all times. Installation will be as required by the DOD Construction Criteria Manual 4270.1-M or, in the case of afloat facilities, General Specifications for Ships of the U.S. Navy, Section 644f.

b. Water closets and urinals must be designed for easy cleaning.

c. Toilet rooms must be completely enclosed and must have tight-fitting, self-closing, solid doors which are kept closed except during cleaning and maintenance, or as required to assist the handicapped

d. Toilet rooms must not open directly into food preparation areas.

e. Toilet facilities, including vestibules, must be kept clean, free of objectionable odors, and in good repair. Adequate quantities of toilet tissue, hand towels and other supplies must be provided at all times. Easily cleanable receptacles must be provided for waste materials and sanitary napkins. All receptacles will be covered with self-closing lids.

f. The storage of food, equipment, utensils, and single service articles in the toilet rooms or vestibules is prohibited.

### **5-7.2 Hand Washing Lavatory Facilities**

a. Hand washing facilities must be conveniently located to permit use by employees in food preparation and utensil washing areas and located in, or immediately adjacent to, toilet rooms or toilet room vestibules.

b. Each hand washing facility must be designed to provide tempered water through a mixing valve or combination faucet.

c. Any self-closing, slow closing or metering faucet must provide a flow of water for at least 15 seconds without the need to reactivate the faucet.

d. Steam mixing valves are prohibited at hand washing facilities.

e. Ample supplies of powdered or liquid soap in appropriate dispensers and proper hand drying equipment such as disposable

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paper towels and hot air hand dryers must be provided. The use of single service continuous cloth toweling is permitted provided it is dispensed from a cabinet that retracts all soiled toweling and bears the seal of the NSF or its equivalent. When disposable towels are used, a waste receptacle must be located at each hand washing facility or group of adjacent facilities.

f. Lavatories, soap dispensers, hand drying devices, and all other related facilities must be kept clean and in good repair.

g. In situations where food exposure is limited and hand washing facilities are not conveniently available, such as in some mobile or temporary food service facilities or at some vending machine locations, the PMA may approve chemically treated towelettes or other appropriately dispensed disinfectants for hand washing.

### **5-8 GARBAGE AND REFUSE DISPOSAL**

#### **5-8.1 CONTAINERS**

#### **5-8.2 STORAGE**

#### **5-8.3 DISPOSAL**

#### **5-8.1 Containers**

a. Garbage and refuse must be kept in covered, durable, easily cleanable, insect and rodent resistant, leak proof, nonabsorbent containers that are maintained in good repair. Refuse containers manufactured from thermoplastic should be NSF listed or equivalent. Plastic bags and/or wet strength paper bags may be used to line containers. Refer to OPNAVINST 5090 series for guidance on disposal of plastic materials at sea. Plastic rubber trash containers are prohibited for use on ships.

b. Refuse compactors and compactor systems should be NSF listed or equivalent. Containers and compactors must be easily cleanable and provided with tight-fitting lids, doors or covers. They must be kept closed when not in actual use. Drain plugs, where applicable, must be in place at all times, except during cleaning.

c. Sufficient numbers of garbage and refuse containers must be provided to prevent overfilling. The containers must be emptied as necessary during operations and at the close of each working day. After being emptied, each container must be thoroughly cleaned inside and outside, in a manner which will not cause contamination of food, equipment, utensils, or food preparation areas or, if cleaned outside, create a nuisance. Suitable facilities, can washer, detergent, and hot water or steam mixing valves must be provided and used for cleaning refuse



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equipment and containers.

d. Soiled refuse equipment and containers must be cleaned at a frequency to prevent them from becoming insect and rodent attractors and a source of contamination.

### **5.8.2 Storage**

a. Garbage and refuse on the premises must be stored in a manner that makes it inaccessible to insects and rodents. Outside storage of plastic containers which are not rodent resistant, e.g., unprotected plastic bags, paper bags or baled units which contain refuse, is prohibited. Cardboard or other packaging material not containing food wastes may be stored outside without being in a covered container.

b. When inside storage rooms and areas are used they must be constructed to meet the criteria in Section 5-2 and maintained in a manner which prevents or minimizes the accumulation of filth, the occurrence of odors and the existence of vermin.

c. When possible, outside storage areas or enclosures must not be located within 100 feet of the food establishment. The areas must be large enough to store the garbage and refuse containers that accumulate and must be kept clean and in good repair. The storage surface must be constructed of nonabsorbent material such as concrete, be smooth and be sloped to drain. The enclosure, if used, must be constructed of durable and cleanable materials.

d. Dumpsters and other containers used to store garbage must be thoroughly cleaned with high pressure water or steam as required. Cleaning twice each week is recommended whenever flies are present.

### **5.8.3 Disposal**

a. Garbage produced in large volume such as produced at messes, clubs, cafeterias and commissaries should be removed from the premises at least daily by a transport vehicle, or by portable containers which are constructed, maintained and operated according to applicable law.

b. Food waste disposers or grinders may be used for garbage disposal provided they are designed and/or located in a manner which precludes contamination of food contact surfaces as a result of splash and aerosol generation. When approved by CHBUMED, shipboard waste disposers located in separate sculleries may have the capability for either fresh or salt water flushing. Proper warning plates and operating instructions must be posted

(see GENSPEC, Section 593).

c. Refuse must be removed as often as necessary to prevent nuisance or hazardous conditions. It must be disposed of by an approved public or private community refuse facility or by an individual refuse facility which is sized, constructed, maintained and operated according to law.

d. Garbage disposal as feed for hogs is prohibited in many States. This method of disposal must conform to local and State laws.

e. Disposal of garbage from vessels returning to CONUS from foreign ports must comply with requirements of SECNAVINST 6210.2 and NAVSUP PUB 486, Volume 1, Article 4033.

### **5-9 INSECT AND RODENT CONTROL**

- 5-9.1 STORED PRODUCTS PESTS**
- 5-9.2 INSECT AND RODENT ACCESS**
- 5-9.3 PEST CONTROL OPERATIONS**

#### **5-9.1 Stored Products Pests**

Guidelines for insect infestation of subsistence are contained in Chapter 8, NAVMED P-5010, Medical Entomology and MIL-STD-904A.

#### **5-9.2 Insect and Rodent Access**

a. Food service establishment openings to the outside must be effectively protected against the entrance of rodents and insects. The establishment will have no holes and other gaps along the floors, walls, and ceilings. Outside openings will be controlled by the use of self-closing tight-fitting doors and/or closed tight-fitting windows. Outside openings that are kept open for ventilation, deliveries or other purposes will have screens, air curtains or other means of protection. Screens must be tight-fitting, free of breaks or tears, and not less than 16 mesh to the inch of screen.

b. Screens are not required in air-conditioned food service spaces where windows or portholes are sealed closed. Air curtains must meet the standards of NSF Standard No.37 or be equivalent. Further guidance is available in the NAVMED P-5010 Chapter 8 and OPNAVINST 6250.4A.

#### **5-9.3 Pest Control Operations**

Only certified pest control professionals are allowed to conduct

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pest control operations except for the use of approved bait stations.

### **5-10 POISONOUS OR TOXIC MATERIALS**

#### **5-10.1 SEPARATION**

#### **5-10.2 CONDITIONS OF USE**

#### **5-10.3 PESTICIDES**

#### **5-10.1 Separation**

All poisonous or toxic materials shall be stored so not to contaminate food, equipment, utensils, linens, and single service and single use articles.

#### **5-10.2 Conditions of use**

All poisonous or toxic materials shall be properly labeled with the manufacturer's directions. Additional restrictions may be established by the regulatory authority.

#### **5-10.3 Pesticides**

Pesticides shall be stored outside food service spaces.